2: Hockings E-4,5 (1962-1977) 1980
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175 succeeded in adapting to their new social and geographic environ-
174 ment. We may presume that natural selection helped the popula-
tion build up a genetic resistance to whatever montane illnesses had not previously affected the people when they were living in Mysore and that some lowland disease organisms were no longer able to survive at the new elevation, either because it was too high and cold for them or because the hosts among the scattered and tiny population died off without transferring these organisms to new hosts, or more probably because the population density was so low that, after one infection by any particular disease organism, antibodies were built up that protected all Badagas from any further infection in the near future. As the settlements expanded, the increasing numbers of people permitted greater transference of disease organisms and called for greater amounts of health care; but at the same time these settlements, located in most parts of the Nilgiri Plateau within a zone that lay between 1,200m and 2,200m feet elevation, gave people opportunities to select the more healthy residential sites, to explore micro-environmental differences in the area and most importantly to discover medicinal uses for dozens of new species of plants that were in many instances confined to the Plateau. We may presume that the pharmacological uses of local plants were discovered by Badaga women who worked as goat-herds and closely observed the feeding habits of their animals. While it is true that Badagas do not keep goats today, they did so during the seventeenth century and later too.

175 After contact with the British a new equilibrium with their
177 changed environment was achieved by the Badagas, and their
164 population was able to increase rapidly for several decades while there was still a very low density of population. Why? One relevant factor, I would hypothesise, was that a change in their drinking habits followed the arrival of the British (from 1819 onward) and that this was associated with greater resistance to bacteria in the
[272] drinking water. The main drinks of the community at the time
[273] were fresh milk and stream water. Yet by the 1840s arrack, a locally made liquor, as well as tea and coffee, were common Badaga preferences. Other cultural practices confined infectious bacteria to relatively limited areas. Buffalo dung tended to collect
[514] in the stone kraals built just outside the villages. Similarly, indiscriminate spitting was not tolerated and spittoons were consequently in common use. A proverb stressed that, 'If you ask for an obligation it is essential to see the right people; it is essential

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578 797 Violent opposition to almost every conversion characterized relations between Hindu Badagas and the mission from the time of the first conversion in 1858 to 1904, the last year in which some conversions 'roused a storm of persecution which could only be suppressed by the help of the police' (B.E.M.S., 1904, no. 65, 68–69).

186 At about that time a story was circulating among Badagas and elsewhere in South India that just before Christmas the Christians sacrifice a human and offer the head on their altar; a Freemasons' Lodge in Wellington was said to preserve the skeletons.[14]

*Personal Disorientation*

115 296 (177) (223) There are a number of references in the Nilgiri literature to opium and intoxication. Opium had been produced and taken by the Badagas as early as 1812 at least, when there was an official reference to it (Keys, 1812, li; Macpherson, 1820, lix). But liquor was apparently unknown to them until three decades after their first contacts with the British (Marshall, 1873, 82). It was noted in 1820 (Macpherson, lix) that no intoxicant was distilled, drunkenness was unknown and opium chewed only in moderation. Though opium continued to be taken (Young, 1827, 42), locally made intoxicants were still unknown to the Badagas in 1834 (Ainslie, 1834, 36). By the time the mission was active among them, however, opium-eating was widespread (Metz, 1864, 132; Gover, 1871, 87), even though its manufacture was outlawed by the British in 1854 (Price, 1908, 224). Opium-eating was occasionally a problem in the Christian congregation and continued for long as a solace for the Hindus; it was stated to be on the increase at the turn of the century (B.E.M.S., 1897, no. 59, 64; Basel Mission, 1905, 119, 129–130). Drinking was also an increasing problem at that time: in 1892 the Society of Virtuous People at Eḍapaḷḷi tried to stop the use of liquor and drugs there (B.E.M.S., 1892, no. 53, 77–78; Basel Mission, 1905, 170–172, 179). In 1905, a year of plague, some Badagas near Kotagiri decided their whole community was being ruined by drinking, and '... pledged themselves to their goddess Hette to give it up and to excommunicate [i.e., ostracize] everyone who transgresses this convenant' (B.E.M.S., 1905, no. 66, 68). The next year in Ke:ti Wieland noted that drinking was increasing rapidly among Badagas (B.E.M.S., 1906, no. 67, 63). The anecdotes quoted above contain a specific instance (in 2) of acute stress leading to apparent alcoholism; the Ke:ti

733 273 296 733

4: Hockings E-5 (1962-1977) 1980
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goats recently, they did so during the seventeenth century and even later (Finicio 1603: 723; Birch 1838:103).

1.7. After contact with the British a new adjustment with their changed environment was achieved by the Badagas, and their population was able to increase rapidly for several decades while there was still a very low density of population. One relevant factor, I would hypothesize, was that a change in their drinking habits followed the arrival of the British (from 1819 onward), and that this was associated with greater resistance to bacteria in the drinking water. The main drinks of the community at the time were fresh milk and stream water: "...at midday, or towards evening, parties of them are often to be seen seated on the bank of some brook or rill, partaking of their simple fare, which generally consists of barley or other meal, mixed up with some of the pure element that is gurgling past them, a little salt, and a little chilly" (Harkness 1832: 111; so also Young 1827: 42, Birch 1838:103, and Dulles 1835: 465-66). Two British officials, one a surgeon, make it clear that until the 1830s the Badagas had no alcohol, and "drunkenness is unknown here" (Macpherson 1820: lix; Ainslie 1834: 36). But the surgeon had already in 1829 recorded that he had "tasted very tolerable specimens of beer which had been brewed on these hills from malt of Native Manufacture" (Price 1908: 218). Within another two decades a staggering change had come about:

> Lord Tweeddale...in 1847,...stated that he had never anywhere seen such widespread and continuous drunkenness amongst low-class natives as prevailed there [the Nilgiri town of Ootacamund], not only in the case of those resident, but also in that of peons, followers, and servants, brought up from Madras and other places. The drink at this time available was...arrack, which ...was not very expensive. (Price 1908: 51)

This drunkenness was more of an urban than a rural phenomenon, although some Badagas did go to the town to indulge themselves. Meanwhile, at the same time that beer and arrack were becoming available, so were tea and coffee. These hot drinks were generally preferred by the Badagas to stream water, because of the cool climate, even though they had a religious tabu against heating milk (Vivekanandam Pillai 1937:247). In this latter regard, I was told that if one keeps milk in a warm place it will "boil up" of its own accord

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also contributed to a reduction in the spread of viruses, particularly as the cattle are generally kept away from these courtyards fronting the houses.

The ecological significance of these various beliefs and practices is that as the Nilgiri population increased in the nineteenth century and some village streams began to be polluted by this new pressure, the Badagas managed to avoid some contamination by switching from drinking stream water and fresh milk to tea, coffee and sometimes alcohol, all of which would be relatively free of bacterial organisms. The new balance with the environment that this change brought about was certainly one factor in the remarkable increase in the Badaga population ever since the advent of the British (Diagram 1).

At the same time that this change in drinking habits was occurring their eating habits were undergoing an equally radical transformation. In part this was due to the several dozen types of fruit, grain and vegetable introduced from Europe by British settlers and adopted by most Badagas (2.1, Table 2; Hockings 1973: 867). The variety of their diet was thus greatly improved. Also the earlier habit of eating a midday meal, often in open air (Harkness 1832: 111), tended to cease as more and more Badaga adults began working for an hourly or daily wage on the plantations and construction projects initiated by the British, and as increasing numbers of children spent the day in school. In the later nineteenth and early twentieth centuries it thus became usual for Badagas to consume only two meals a day, generally in their own homes, one at sunrise and the other in the evening. The importance of this practice from a hygienic viewpoint was that, because flies are normally active only during daytime, "eating at night or in the early morning may protect food from fly-borne contamination" (Alland 1970: 59). Any change of diet or of custom that tended to reduce the human intake of bacterial organisms was reflected in the greatly increased life expectancy during the past century and a half.

1.8. By the later nineteenth and the twentieth centuries successful exploration of the botanical realm and this steadily increasing Badaga population had, through a process of interaction and by individual experiments, observations of animal browsing, or other acts of discovery about which we can know nothing, developed the third phase in their medical history — the full-fledged therapeutic system described in this book. As an increasingly heavy work-load was

| | | | | |
|---|---|---|---|---|
| 262 | MEATS : | | | |
| 261 | eggs | × | | |
| | mutton | × | | |
| | chicken | × | | |
| | fish | × | | |
| | Nilgiri "ibex" or tahr | × | | |
| | pork | | × | |
| | OILS : | | | |
| | gingelly oil | × | | 79, 104-105, 109, 113, 126 |
| | coconut oil | × | | 74, 85, 112, 134 |
| | castor oil | | × | 74, 80, 104, 113, 118, 128 |
| | STIMULANTS, NARCOTICS : | | | |
| [272] | coffee | × | | 77, 80, 82 |
| [270] | chewing tobacco | × | | 104, 111, 128-129 |
| [273] | brandy | × | | 80 |
| | arrack | × | | |
| [276] | opium | ×× | | 80-81, 127, 131, 139 |
| | betel with lime | | × | |
| [272] | tea | | × | |
| | OTHER MISCELLANEOUS FOODS : | | | |
| [263] | salt | × | | |
| | milk | × | | |
| | honey | × | | |
| | *vibuti* (sacred ash) | | × | |
| | weathered feldspar "earth" | | × | |
| | crude sugar (jaggery) | | × | 81 |
| | buttermilk | | × | |
| | clarified butter | | × | |
| | curds | | × | |
| | crude palm sugar | | × | |
| | black pepper | | × | |
| | water | | × | |
| | butter | | ×× | |
| [263] | spices (cooked in curry) | ? | ? | ? |

(*Note* : xx indicates an extreme heating or cooling effect.)

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261 by Badaga infants. One would certainly expect pregnant women and
146 plantation labourers to be the people suffering most from mineral
deficiencies in their diet. One clay sample from Ootacamund, of
[134] the kind that Badagas eat, had the following chemical components
[135] (Hooper and Mann 1906: 262):

| | |
|---|---|
| Loss on ignition— | 9.63% |
| (including nitrogen) | 0.23% |
| Silica | 71.66% |
| Feric oxide | 2.71% |
| Alumina | 4.94% |
| Lime | 5.78% |
| Magnesia | 1.54% |
| Potash | 0.88% |
| Soda | 1.01% |
| Sulphuric acid | 0.06% |
| Phosphoric anhydride | 1.79% |

261 *Gopi* mud was a clay that used to be mixed with water and left to stand in the house. Later the water developed a salty taste and would be used in cooking (Belli Gowder 1923-41: 2).

*Liquor*

•273 2.5. There is no doubt that the British introduced the Badagas to
[177] the demon drink, for their earliest reports on the community make it clear that "Liquors of an intoxicating quality are never distilled on the hills nor drunk by any of the castes" (Macpherson 1820: lix; cf. Ainslie 1834: 36). Yet by 1829 local Englishmen had brewed
[175] beer "from malt of Native Manufacture" (Price 1908: 218). By 1847, as we have already mentioned, Ootacamund had become a centre of "widespread and continuous drunkenness amongst low-class natives" (Price 1908: 51). For nearly a century following that date there are occasional complaints in the literature about the drunkenness of Badagas. Even today it is usually possible to see one or two drunken men in any village in the later afternoon, particularly on festival days.

The local liquor industry has fluctuated with repeated attempts to enforce prohibition, both before and after Independence. At the present time prohibition is once again the law. The women rarely

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Diagram 4 : Sectional diagram showing two methods of distilling

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drink liquor, but many male adults drink habitually, and well-placed Badagas can always get liquor through contacts at the army's Staff Training College in Wellington, or by buying "units" from a foreigner who has a liquor permit, or by bribing a medical officer to certify that they need alcohol, or most commonly by buying it from the illegal manufacturers who "moonlight" near many of the villages.

2.6. "Country arrack," as their product is usually called, is made in stills hidden in the woods away from villages (Diagram 4). A typical "crock" contains ten gallons: the Diagram illustrates a ten-gallon still which I was shown in 1963. To start with, 12 lbs of a bark is put into the pot. For preference it is that of the babul tree; but failing that the bark of mountain black plum or the jagged jujube will also precipitate the albuminous matters that would otherwise putrefy the liquid or give it a nauseous flavour. (The latter two barks are not considered very healthy to use.) Once the bark has been placed in the pot, it is filled with water. If this is hot the bark should soak for three days, if cold for five. After the soaking 30 lbs of the poorest quality of crude sugar is added, along with a half-pound block of chloride of ammonia (otherwise used in soldering). For faster results more of this chemical may be added, but it is not usually done because of the presumed risk to health. Sometimes cardamom, coriander or other scented spices are added to improve the flavour. This mixture is covered and left to stand for a minimum of five days and a maximum of ten. If left for ten before being distilled the arrack (from the Arabic *arak*, "sweat") will taste better, but if left any longer it will spoil.

To distil the drink, all of the bark is first removed, but the liquid is not strained because it has very little deposit in it. Then the pot is boiled at night, and once boiling a small wood fire is kept under it so that it will simmer for a long time. The three sections that make up the still are now sealed together with strips of rag stuffed in the joints, and these are smeared over with mud so that the whole becomes an airtight unit. The spout is also stopped with rag, through which the distilled liquor oozes and drips into a bottle. This liquor is formed because the fumes inside condense on the bottom of an upper vessel containing cold water. As each bottle is filled, the water is changed for a colder supply; for this reason the still has to be close to a stream. Care has to be taken that the still does not explode. There is a second method (Diagram 4) which is only rarely used for making arrack because the threat of an explosion is so great. In

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this method the liquor does not come into contact with the outside air, and hence is considered stronger. Instead of dripping into a bottle, it is caught in a pan inside the still.

The ten-gallon still will produce 2½ gallons of liquor. The first bottles collected from it are the stronger since they contain less condensed water vapour, but all of the bottles are re-mixed before sale to achieve a uniform strength. Usually 3/4 gallon of water is added at this point (i.e., a ratio of 1:3). But a much finer quality of arrack can be made for one's own consumption: its basis is not plain water, but rather one part of water to one part of natural fruit juices from oranges, berries and crushed bananas, and refined sugar is used in place of the crude variety. The result is considered a very healthy drink but is not readily available. When prohibition is not in force, Badagas usually buy their liquor in stores rather than make this arrack.

No liquor is made from the potatoes, carrots, aloe, and other European vegetables available in the Nilgiris, but one old man reported that an intoxicating beverage could be made from freshly ground prince's feather mixed with the milk of a buffalo that had just given birth. To become intoxicated by this drink, he said, one should sit near the fire or in the sunlight for a while.

*Smoking*

2.7. Women rarely drink liquor except medicinally, as for example after childbirth, but older women do smoke. Before cigarettes became available they used to roll some tobacco leaf in the broad leaf of the buckthorn bush, hold it together with a finger ring, and smoke it like a cigarette. There was also a vine, the common pepper of Ootacamund, which, if cut to a short length and dried, could be smoked like a cigarette because of its hollow stem.

In the early days tobacco had to be imported from the plains, and only the wealthy could afford it. Cigars are still a prestige item today, and it is cigars that a few old women (always post-menopausal) now smoke in place of the earlier *elebati* ("leaf-smoke"). Women of the low-status Toreya phratry smoke *bi:dis*, a coarse cigarette; but although cheap they are not the commonest smoking material for Badaga women. What they prefer to do is to share a clay or bone pipe, which is passed around amongst a group of female

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844 [845] a midwife who knows this skill shakes the woman's legs until the baby comes into the right position.

*Post-partum Practices*

4.10. Before the cutting of the umbilicus, the baby is laid on the floor on sacking or cloth. The cord is tied with a piece of string (in old days, a thread lampwick), some 8 cm. from the belly. This string is to curtail bleeding. Then the umbilical cord is cut with a penknife or razor blade. In earlier days, significantly, it was only to be cut with a knife made by the Kotas and otherwise used in reaping.

Immediately a couple of handfuls of cold water are poured on the infant's shoulders or dabbed on with a cloth. In particular the left shoulder of a boy is wetted, or the crown of the head if it is a girl. This act is intended to make the child strong for carrying things, on the shoulder and head respectively. It is then bathed in very hot water.

In earlier days the next step was to cover the baby with oil pressed from the seeds of the castor-oil bush. Now ground-nut oil is put all over the body instead. The mother also takes a bath in very hot water—hotter than a normal bath. After this she sits down and is given a tumbler of cold water to drink. This is to make any shivering subside and to give her peace of mind. Some [273] women now take a sip of brandy, a practice dating back a century or so. If a woman's family are too poor to afford a nip of brandy, [276] a little opium is perhaps given instead, or else very poor people might simply crush a dried poppy head and give it to the mother in a glass of tea or coffee. Typically a poor mother will get one dose of opium just after the delivery, and then another on the [276] following two days. The problem with using opium as a medicine is that, whether it is taken after childbirth or simply to cure a cold, it may become addictive. The new mother is also given a little palm jaggery (a kind of crude sugar that keeps for years). Next they give her three or four cloves of garlic to eat, while one piece is put into each of her ears.

844 846 4.11. After both mother and baby have been bathed, the child is brought back to her. The mother sits, holding the baby, with its face on her right side and at the right breast. Before taking its first suck, it is given a drop of ground-nut oil to drink. Then a lime is cut in